22 Meas ppe a plus sign inside this box

, Total Number of Pages in This Submission

PTO/SB/21 (08-00)
Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

10/075,721 **Application Number** Filing Date February 14, 2002 Berthet, et 的ECEIVED First Named Inventor **Group Art Unit Examiner Name** Attorney Docket Number

ENCLOSURES (check all that apply) Fee Transmittal Form Assignment Papers (for an Application) Fee Attached Drawing(s) Amendment/Reply Licensing-related Papers Appeal Communication to Board of Appeals and Interferences Appeals and Interferences Appeal Communication to Board of Appeals and Interferences Appeal Communication to Group (Appeal After Final Petition Petition Proprietary Information Status Letter Power of Attorney, Revocation Change of Correspondence Address Express Abandonment Request Terminal Disclaimer V Information Disclosure Statement Certified Copy of Priority Document(s) Response to Missing Parts/ Incomplete Application Response to Missing Parts/ Incomplete Application Response to Missing Parts/ under 37 CFR 1.52 or 1.53 Signature Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357 Application After Allowance Communication to Group (Appeal Communication to Board of Appeals and Interferences Appeal Communication to Board of Appeals and Interferences Appeal Communication to Board of Appeals And Interferences Appeal Communication to Board of Appeals Appeals and Interferences Appeal Communication to Board of Appeals Appeal Communication to Group (Appeal Communication to Gorup (Appeal Communication to Go									
Fee Attached Drawing(s)		ENCLOSURES (check all that apply)							
Appeals and Interferences Amendment/Reply Licensing-related Papers Appeal Communication to Group (Appeal Notice, Brief, Rept) Brief) Petition Petition Petition Proprietary Information Status Letter Power of Attorney, Revocation Change of Correspondence Address Express Abandonment Request Terminal Disclaimer Response to Missing Parts/ Incomplete Application Response to Missing Parts under 37 CFR 1.52 or 1.53 Signature Appeals and Interferences Appeal Rowice, Brief, Rept) Brief) Appeal Rowice, Brief, Rept) Brief, Rept Brief) Proprietary Information Status Letter Other Enclosure(s) (please Identity below) Terminal Disclaimer Request for Refund CD, Number of CD(s) SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Signature Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357 Towns A Miller, Reg. No. 40,091	Fee Transmittal Fo	m _							
After Final After Final After Final Petition Petition Proprietary Information Status Letter Application Power of Attorney, Revocation Change of Correspondence Address Express Abandonment Request Terminal Disclaimer Proprietary Information Status Letter Other Enclosure(s) (please identify below) Terminal Disclaimer Request for Refund Certified Copy of Priority Document(s) Response to Missing Parts/ Incomplete Application Response to Missing Parts under 37 CFR 1.52 or 1.53 Signature Marshall, Gerstein & Borun 6300 Sears Tower or 233 South Wacker Drive Individual Name Reg. No. 40,091 Signature Affidavits/declaration(s) Proprietary Information Status Letter Other Enclosure(s) (please identify below) Terminal Disclaimer Request for Refund CD, Number of CD(s) JUL 2 6 2002 Signature Affidavits/declaration(s) Status Letter Other Enclosure(s) (please identify below) Terminal Disclaimer Request for Refund CD, Number of CD(s) Signature Affidavits/declaration(s) Status Letter Other Enclosure(s) (please identify below) Terminal Disclaimer Request for Refund Request for Refund Marshall, Gerstein & Borun 6300 Sears Tower Or 233 South Wacker Drive Chicago, IL 60606-6357 Thomas A Miller, Reg. No. 40,091	Fee Attached	ı	Drawing(s)						
Affidavits/declaration(s) Extension of Time Request Express Abandonment Request Information Disclosure Statement Certified Copy of Priority Document(s) Response to Missing Parts/ Incomplete Application Response to Missing Parts/ under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Firm 6300 Sears Tower or or Individual Name Signature Affidavits/declaration(s) Petition to Convert to a Provisional Application Charge of Correspondence Address Charge of	Amendment/Reply)	Licensing-related Papers						
Application Extension of Time Request	After Final		Petition	Proprietary Information					
Express Abandonment Request ☐ Express Abandonment Request ☐ Information Disclosure Statement ☐ Certified Copy of Priority ☐ Document(s) ☐ Response to Missing Parts ☐ Incomplete Application ☐ Response to Missing Parts ☐ Response to Missing Parts ☐ Incomplete Application ☐ Remarks ☐ JUL 2 6 2002 ☐ Marshall, Gerstein & Borun ☐ 6300 Sears Tower ☐ 233 South Wacker Drive ☐ Individual Name ☐ Change of Correspondence Address ☐ (please identify below) ☐ CD, Number of CD(s) ☐ JUL 2 6 2002 ☐ JUL	Affidavits/dec	claration(s)		Status Letter					
Information Disclosure Statement	Extension of Time I	Request							
Certified Copy of Priority Document(s) Response to Missing Parts/ Incomplete Application Response to Missing Parts under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Firm Or Individual Name Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357 Signature Firm Or Individual Name Indivi	Express Abandonm	nent Request	Terminal Disclaimer	Ÿ					
Response to Missing Parts/ Incomplete Application Response to Missing Parts under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Individual Name Individual N	√ Information Disclos	sure Statement	Request for Refund						
Incomplete Application Response to Missing Parts under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357 Signature Signature Remarks JUL 2 6 2002 JUL 2 6 2002 Marshall, Gerstein & Borun 6300 Sears Tower Chicago, IL 60606-6357 Marshall, Gerstein & Borun 6300 Sears Tower Miller, Reg. No. 40,091		riority	CD, Number of CD(s)	DE OFTO TES					
Response to Missing Parts under 37 CFR 1.52 or 1.53 SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Firm 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357 Signature Figure 1									
SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357 Signature Signature Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357	Incomplete Applica	ition	Remarks	10 111 2 8 200					
SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357 Signature Signature Marshall, Gerstein & Borun 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357									
Firm 6300 Sears Tower 233 South Wacker Drive Individual Name Chicago, IL 60606-6357 Signature Firm 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357	under 57 CF7	K 1.52 01 1.55	·						
Firm 6300 Sears Tower 233 South Wacker Drive Individual Name Chicago, IL 60606-6357 Signature Firm 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357									
Firm or 233 South Wacker Drive Chicago, IL 60606-6357 Signature Firm 6300 Sears Tower 233 South Wacker Drive Chicago, IL 60606-6357 Thomas A. Miller, Reg. No. 40,091		SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT							
or Individual Name 233 South Wacker Drive Chicago, IL 60606-6357 Signature 7 Horns A. Miller, Reg. No. 40,091	•		un						
Individual Name Chicago, IL 60606-6357 Signature Home Home Home Home Home Home Home Hom			. 1						
Signature / /////									
Luly 18, 2002	Signature	Home	Thomas A. Miller, Reg. No.	. 40,091					
Date July 18, 2002		18, 2002	(

5

I hereby certify that this correto: Commissioner for Patent	espondence is being deposited ts, Washington, DC 20231, on	with the U.S. P	ostal Service as first class mai	, in an envelope addressed
Dated: July 18, 2002	Signature: 1 Forms	[. 14a	(Name of Signer)	Thomas A. Miller

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, Washington, DC 20231, on the date shown below.

Hern

Dated: July 18, 2002 Signature:

Docket No.: 28944/38252

(PATENT)

1 2 2 2002 P

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In reseatent Application of:

Berthet, et al.

Application No.: 10/075,721

Group Art Unit: 2631

Filed: February 14, 2002

Examiner: Not Yet Assigned

For:

Method and System of Iterative

Coding/Decoding of Digital Data Streams Coded By Spatio-Temporal Combinations, In Multiple Transmission and Reception

RECEIVED

JUL 2 4 2002

INFORMATION DISCLOSURE STATEMENT (IDS)

Technology Center 2600

Commissioner for Patents Washington, DC 20231

Dear Sir:

Pursuant to 37 CFR 1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is filed before the mailing date of a first Office Action on the merits as far as is known to the undersigned.

A copy of each reference on PTO/SB/08 is attached.

While the information and references disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR 1.56, it is not intended to constitute an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

Application No.: 10/075,721 Docket No.: 28944/38252

In accordance with 37 CFR 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR 1.56(a) exists. It is submitted that the Information Disclosure Statement is in compliance with 37 CFR 1.98 and the Examiner is respectfully requested to consider the listed references.

The Commissioner is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 13-2855, under Order No. 28944/38349. A duplicate copy of this paper is enclosed.

Dated: July 18, 2002

Respectfully submitted,

Thomas A. Miller

Registration No.: 40,091

MARSHALL, GERSTEIN & BORUN

233 S. Wacker Drive, Suite 6300

Sears Tower

Chicago, Illinois 60606-6357

(312) 474-6300

Attorneys for Applicant

PTO/SB/08B (10-01)

Passages or Relevant

Figures Appear

Approved for use through 10/31/2002.OMB 0651-0031
U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number. Paperwork Reduct Substitute for form 1449B/PTO Complete if Known Application Number 10/075,721 February 14, 2002 RECEIVED INFORMATION DISCLOSURE Filing Date STATEMENT BY APPLICANT First Named Inventor Berthet, et al. Group Art Unit 2631

not yet assigned Examiner Name Technology Center 2600 28944/38252 2 Attorney Docket Number Sheet 1 of **U.S. PATENT DOCUMENTS** Pages, Columns, Lines, Where Relevant **Document Number** Name of Patentee or Applicant of Cited Document Publication Date Cite Examiner

Schilling

MM-DD-YYYY

10/03/2000

(use as many sheets as necessary)

Number-Kind Code² (if known)

6,128,330

Initials*

A1

			OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS	_
Examiner nitials	Cite No. ¹	į	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	B1	•	L.R.BAHL et al. "Optimal decoding of linear codes for minimizing symbol error rate",	
			IEEE France. Inform. Theory, vol.IT-20, pp.284-287, March 1974.	
	B2	V	TAKESHI HASHIMOTO. "A list-type reduced-constraint generalization of the Viterbi	
			algorithm" – IEEE Transactions on Information Theory. Vol IT-33, No.6, Nov.1987	
	B3	I	J.HAGENAUER, P.HOEHER, "A Viterbi algorithm with soft decision outputs and its	Ī
		٠,	applications", Proc. IEEE GLOBECOM'89, pp. 1680-1686, Dallas, USA, Nov.1989.	
	B4	đ	C.BERROU et al. "Near Shannon limit error correcting coding and decoding: Turbo-	Т
			codes" - IEEE ICC'93, pp. 1064-1073, Geneva, Switzerland, May 1993.	
	B5	7	C.DOUILLART et al. "Interactive correction of intersymbol interference: Turbo-	
			equalization" - Europ.Trans. on Telecommunication, vol.6, pp.507-511, Sept.1995	
	B6	j	S. BENEDETTO et al. "Serial Concatenation of interleaved Codes: Performances	
			analysis, design and iterative decoding" - TDA Progress Report 42-126, Aug.1996	İ
	B7	7	G.J. FOSCHINI. "Layered space-time architecture for wireless communication in a	1
			fading environment when using multi-element antennas" Bell Labs Journal. Autumn	
		,	1996	
	B8	i	ETSI.GSM Recommendations, 05.5 version 5.8.0 – Dec.1996.	Τ
	B9	;	V.TAROCK et al. "Space time codes for high data rata wireless communication:	Τ
	1	•	performance criterion and code construction", IEEE Trans. Inform. Theory vol.44,	
		١	No.2, March 1998.	
	B10	1	G.BAUCH, V.FRANZ. "A comparison of soft-in soft-out algorithm for turbo-detection"	1
			Proceedings of ITC, vol.2 pp.259-263, Portos-Carras, Greece, June 1998.	
	B11	1	BAUCH G. "Concatenation of space-time block codes and turbo-TCM"-ICC'99- 1999	
			IEEE International Conference on Comm. Conference Record. Vancouver, CA, June	
			6-10,1999 - IEEE International Conference on Comm - New-York-Vol.2, June 6,1999	
			- pages 1202-1206, XP 000898047 - ISBN 0-7803-5285-8	
	B12	1	BAUCH et al. "MAP equalization of space-time coded signals over frequency	Т
			selective channels" - Proc. Wireless Comm. on Networking Conference (WCNC)	
			Sept.1999	1

Examiner	Date
Signature	Considered

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

PTO/SB/08B (10-01)

Approved for use through 10/31/2002.OMB 0651-0031

U. S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute Company SPTO				respond to a collection of information unless it contains a valid OMB control number. Complete if Known		
"	Solitato Carpy No.			Application Number	10/075,721	
INFORMATION DISCLOSURE				Filing Date	February 14, 2002	
l s	TATEMENT I	3Y /	APPLICANT	First Named Inventor	Berthet, et al.	
				Group Art Unit	2631 RECFIVE	
	(use as many sh	eets as	necessary)	Examiner Name	not yet assigned	
Sheet	2	of	2	Attorney Docket Number	28944/38252 JUL 2 4 20	

Technology Center 2600 Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume-issue number(s), publisher, city and/or country where published. Examiner Initials No. B13 G.J.FOSCHINI et al. "Simplified processing for high spectral efficiency wireless communication employing multi-element arrays", IEEE JSAC, vol.17, No.11, pp.1841-1852, nov.1999. STEVANOV et al. "Turbo coded modulation for systems with transmit and receive antenna diversity"- GLOBECOM'1999 IEEE Global Telecommunications Conference. Seamless interconnection for universal services. Rio de Janeiro, Brazil, Dec.5-9,1999 IEEE Global Telecommunications Conference N.Y. - Vol. 5 (1999-12-05), pages 2336-2340, XP000958539, ISBN 0-7803-5797-3 R.VISOZ et al. "Generalised Viterbi algorithm for trellis coded signals transmitted B15 through broadband wireless channels"- Electronic Letters, pp.227-228, 3 Feb.2000, vol.36, No.3 B16 BAUCH G. et AL-DAHIR. "Iterative equalization and decoding with channel shortening filters for space-time coded modulation". Vehicular Technology Conference Fall 2000. IEEE VTS Falls VTC2000, vol.4, 24-28 Sept.2000, pages 1575-1582, XP002180247, Boston MA, USA LEUNG HANG CHING JASON. "Low complexity turbo space-time code for system **B17** with large number of antennas" Proc. of Global Telecomm. Conf. GLOBECOM'2000, vol.2, Nov.27, 2000-Dec.1,2000, pp.990-994, XP002180248, San Francisco CA, A.O. BERTHET et al. "A comparison of several strategies for iteratively decoding B18 serially concatenated convolution codes in multipath Rayleigh fading environment", Proc. IEEE GLOBECOM'2000, San Francisco, USA, Nov.2000 B19 M.PUKKILA "Turbo-Equalisation for the enhanced GPRS system" - Proc.IEEE Conf. PIMRCOO London UK, 2000. B20 French Search Report of Publication No. FR 0102343, report dated October 16, 2001.

Examiner	Date	
Signature	Considered	

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.